Exhibit 1

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent of:	Gregory G. Raleigh, et al.	
U.S. Patent No.:	9,143,976	Attorney Docket No.: 39843-0186RX1
Issue Date:	September 22, 2015	
Appl. Serial No.:	14/676,704	
Filing Date:	April 1, 2015	
Title:	WIRELESS END-USER DEVICE WITH DIFFERENTIATED NETWORK ACCESS AND ACCESS STATUS FOR BACKGROUND AND FOREGROUND DEVICE APPLICATIONS	

Mail Stop *Ex Parte* Reexam
Central Reexamination Unit
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

REQUEST FOR *EX PARTE* REEXAMINATION OF U.S. PATENT NO. 9,143,976 UNDER 35 U.S.C. § 302 AND 37 C.F.R. § 1.510

packet is running in the foreground or the background." Appx. H, [0188]. This determination/classification further involves "determin[ing] any priorities, such as process[ing] task priority, assigned to the application 338a-338n by the operating system" of the device. *Id.*

[1.7] ***for a time period when data for Internet service activities is communicated through a WWAN modem connection to the at least one WWAN, apply a first differential traffic control policy to Internet service activity on behalf of the first end-user application, such that Internet service activity on behalf of the first end-user application is disallowed when the one or more processors classify the first end-user application as not interacting in the device display foreground with the user, and***

Rao-Oestvall-Shell would have applied policies (including the ***first differential traffic control policy***) that "define prioritization based on whether an application is running in the foreground or the background of the client 105." Appx. H, [0182]. As discussed for [1.6], since this classification (foreground, background) is used to apply policies 520 to adjust network transmissions of application 338a, the classification involves ***apply[ing] [the policy 520] to Internet service activity on behalf of [the application 338]***. Appx. H, [0003], [0004], [0182], [0188]; Appx. C, ¶242.

A POSITA would have found it obvious to configure policy use by Rao-Oestvall-Shell to increase device efficiency in scenarios where device operation increases battery consumption, such as a time period when the device is engaged in network activity over a WWAN network. Appx. C, ¶243. Indeed, in Oestvall,

"battery conservation in battery operated computing devices is very important, particularly in devices such as smartphones that consume high power levels by virtue of connecting to always-on GPRS or 3G cellular networks." Appx. I, [0004]. A POSITA would have found it advantageous to implement Rao-Oestvall-Shell to apply policies 520 to regulate application activity (***apply [the policy 520] to Internet service activity on behalf of [the application 338]***) to reduce battery consumption during time periods when its device is connected to "always-on GPRS or 3G cellular networks" (***a time period when data for Internet service activities is communicated through a WWAN modem connection to the at least one WWAN***). Appx. C, ¶243. For example, in some scenarios where Rao-Oestvall-Shell is communicating over a WWAN network, its device would have leveraged Rao's technique to intercept lower-priority network packets, by leveraging Oestvall's technique of denying access to services or resources, each of which would have reduced battery consumption. *Id*.

Moreover, the plain meaning of this limitation does not require any mobile device configuration in which policy application exclusively occurs when Internet service activities of a mobile device is communicated through a WWAN mode. Appx. C, ¶244. Rather, as explained above, the limitation is met by any mobile device configuration in which policy application occurs on a mobile device configured to communicate over either a WWAN or WLAN. Since Rao-Oestvall-

Shell is configured to communicate over either a WWAN or WLAN, and further has functionality to apply policies in either network scenario, the configuration of Rao-Oestvall-Shell renders this limitation obvious. *Id.*

Rao describes using policy 520 to enable application-aware prioritization, suggesting to a POSITA that policy 520 is applied "***when***" application 338 is classified as not running in the foreground. Appx. C, ¶245. This interpretation is consistent with Rao's disclosures that policies 520 "specify[] client-side prioritization of network communications related to applications 338a-338n" (Appx. H, [0182]) and its motivation to address a scenario in which "a network packet generated or received for an application running in the background [is] processed ahead of a network packet generated or received for the application running in the foreground" (*id.*, [0003]). A POSITA would have found obvious that the evaluation of polices by Rao-Oestvall-Shell to prioritize network transmissions of an application given its interaction state to satisfy any temporal requirement between the use of a policy and classification of an interaction state of an application recited by this limitation. Appx. C, ¶245.

Further, Rao, Oestvall, and Shell each disclose techniques for regulating activity of an application based on one or more classifications of the application, rendering obvious that Rao-Oestvall-Shell would have applied a policy to prioritize network transmissions of application 338. This results in ***Internet service activity***

on behalf of the [application 338] being ***disallowed*** in various ways. For example, based on Rao, if an application is classified as running in the background, network packets of that application would be stored in a queue behind other application(s) with a higher prioritization, resulting in temporary disallowance of network packet transmission. Appx. H, [0038], [0102]. In this scenario, interception of network packets of the application by Rao-Oestvall-Shell would have resulted in Internet network service activity associated with intercepted network packets being presently ***disallowed*** until and so long as the device is instead focused on handling "one or more network packets ahead of at least one network packet in the queue" associated with the application. Appx. H, [0038], [0046]; Appx. C, ¶246.

As another example, a POSITA would have configured Rao-Oestvall-Shell to implement Oestvall's techniques of preventing an untrusted application running in the background from "being given any services or consuming any resources." Appx. I, Abstract. As discussed in Section VII.F.1, this would have been accomplished using an Oestvall-like scheduler in Rao-Oestvall-Shell based on a classification of application 338 and a determination by an Oestvall-like window server component that determines if the application is running in the foreground or background. Appx. I, [0023]. Thus, in a scenario where application 338 is an untrusted application presently in the background, the Oestvall-like scheduler would "prevent[] the [application 338] from running," e.g., "operate so as to never

allocate any services or resources to the [application 338]." *Id.* Because Internet network service activity is a type of service or resource service, in this scenario, the prevention of access to resources and services for the application 338 by Rao-Oestvall-Shell would have resulted in the Internet network service activity associated with application 338 being ***disallowed*** as long as the application 338 remains in the background (based on its classification as an untrusted application). Appx. C, ¶247.

[1.8(a)] indicate to the first end-user application, via an application program interface (API), one or more network access conditions based on the applied first differential traffic control policy,

As discussed in Section VII.F.1, a POSITA would have configured Rao-Oestvall-Shell to perform various types of prioritizations, e.g., based on network packet transmission (from Rao) and application classification (from Oestvall). Appx. C, ¶248; Appx. H, [0003], [0004], [0182], [0188]; Appx. I, [0002], [0023]. Rao-Oestvall-Shell would have enabled a configuration that regulates an application's access to system resources (resources for accessing a network), rendering the requirements of this limitation obvious.

Rao-Oestvall-Shell includes an improved version of Rao's agent 326 that regulates applications by applying a policy (***applied first differential traffic control policy***). For example, as discussed in Section VII.B.2(a), in Shell, connection manager modules apply decision logic (***one or more network access***

VIII. CONCLUSION

For the forgoing reasons, the references discussed herein raise substantial and new questions of patentability with respect to the Challenged Claims of the '976 patent. These references each were published or filed prior to the earliest potential filing date of the '976 patent. These references therefore are prior art statutorily under 35 U.S.C. § 102 and § 103 and substantively render the Challenged Claims obvious for the reasons discussed above.

Respectfully submitted,

Dated: August 5, 2024

/Jeremy J. Monaldo/
W. Karl Renner, Reg. No. 41,265
Jeremy Monaldo, Reg. No. 58,680
Ryan Chowdhury, Reg. No. 74,466
Fish & Richardson P.C.
P.O. Box 1022
Minneapolis, MN 55440-1022
T: 202-626-6376
F: 202-783-2331